CIRC ACCESSION NO--AP0116666
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE CYCLODEHYDRATION OF
POLY(2,4,BIPHENYLYLENE AMIDES) (I) AND POLY(2,2,BIPHENYLYLENE AMIDES)
(II) (PREPD. FROM 2,4 AND 2,2,DIAMINOBIPHENYL AND TEREPHTHALOYL
CHLORIDE) WAS STUDIED IN THE PRESENCE OF POCL SUB3 IN PHNO SUB2 AT
100-30DEGREES FOR 1-5 HR.  CYCLODEHYDRATION OF I AND II GAVE
POLY(PHENANTHRIDINYLENE AMIDE) (III) AND POLY(4,9,DIAZAPYRENYLENE
ARYLENE) (IV) OF HIGH THERMAL STABILITY AND RESISTANCE TO OXIDATIVE
THERMAL DEGRADATION.  THERMAL CYCLODEHYDRATION OF I AND II IN VACUO AT
250-320DEGREES GAVE SOME PHENANTHRIDINE RINGS.  THE MECH. PROPERTIES,
SOLY., AND THERMAL STABILITY OF III AND IV WERE MAINLY DETD. BY THE
STRUCTURE OF THE STARTING AMINES.          FACILITY:  MOSK.
KHIM.-TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

1/2     016                     UNCLASSIFIED              PROCESSING DATE--30OCT70
TITLE--SYNTHESIS OF AROMATIC POLYAMIDES BASED ON 2,4 AND 2,2 PRIME
  DIAMINOBIPHENYLS -U-
AUTHOR-(04)-KOLESNIKOV, G.S., FEDOTOVA, O.YA., MATVELASHVILI, G.S.,
  GUTSALYUK, E.V.
COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDN., SER. A 1970, 12(3), 528-35

DATE PUBLISHED-------70


SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYAMIDE COMPOUND, AMINE, POLYNUCLEAR HYDROCARBON, THERMAL
  STABILITY, POLYMER STRUCTURE, POLYCONDENSATION


CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1186        STEP NO--UR/0459/70/012/003/0528/0535

CIRC ACCESSION NO--AP0116651
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0116651
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  AROMATIC POLYAMIDES (I) WERE
PREPD. BY LOW TEMP. POLYCONDENSATION IN ACNME SUB2 OF 2,2 PRIME
DIAMINOBIPHENYL AND 2,4,DIAMINOBIPHENYL AND SEVERAL AROMATIC ACID
CHLORIDES, E.G., ISOPHTHALOYL AND TEREPHTHALOYL CHLORIDES AND
2,6,PYRIDINEDICARBOXYLIC ACID DICHLORIDE.  I HAD SOFTENING POINTS OF
110-300DEGREES.  POLY(2,4,BIPHENYLYLENE AMIDES) AND POLY(2,2 PRIME
BIPHENYLYLENE AMIDES) (E.G. II) EXHIBITED SUPERIOR THERMAL STABILITY AND
RESISTANCE TO OXIDATIVE THERMAL DEGRADATION.  THE EFFECTS OF POLYMER
STRUCTURE ON PHYSICOMECH. AND CHEM. PROPERTIES ARE DISCUSSED.
FACILITY:  MOSK. KHIM. TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2    006                                                    PROCESSING DATE--04DEC70
TITLE--AMMONOLYSIS OF PHOSPHORUS PENTACHLORIDE BY AMMONIUM CHLORIDE IN THE
  PRESENCE OF PYRIDINE -U-
AUTHOR-(04)-ZHIVUKHIN, S.M., KIREYEV, V.V., POPILIN, V.P., KOLESNIKOV,
  G.S.
COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1229-33

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMMONOLYSIS, PHOSPHORUS CHLORIDE, PYRIDINE, AMMONIUM CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0937           STEP NO--UR/0078/70/015/005/1229/1233

CIRC ACCESSION NO--AP0137965
                             UNCLASSIFIED

UNCLASSIFIED          PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137965
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  A 65PERCENT YIELD OF
CHLOROPHOSPHAZENES (I), (PNCL SUB2)SUBN, FORMED WITHIN A FEW MIN IN THE
REACTION OF PCL SUB5 WITH NH SUB4 CL IN MIXT. CONTG. 4 MOLES PYRIDINE
PER MOLE OF PCL SUB5.  IN THE PRESENCE OF AN INERT SOLVENT, SUCH AS
PHCL, THE REACTION WAS SLOWER BUT THE YIELD OF CRYST. I WAS 80-5PERCENT
WITHIN 5-8 HR.

UNCLASSIFIED

1/2    017              UNCLASSIFIED        PROCESSING DATE--04DEC70
TITLE--SYNTHESIS OF COLORED POLYESTERS BASED ON 2,2,BIS 4,HYDROXYPHENYL
   PROPANE AND PHTHALIC ACIDS -U-
AUTHOR-(04)-SMIRNOVA, O.V., LAMM, V.N., MIKITAYEV, A.K., KOLESNIKOV, G.S.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(4), 313-16

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--INTERFACIAL POLYCONDENSATION, HYDROXYL RADICAL, NAPHTHALENE,
   AZO COMPOUND, CARBONATE, POLYESTER RESIN, PROPANE, COLOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0736        STEP NO--UR/0460/70/012/004/0313/0316

CIRC ACCESSION NO--AP0136175
                        UNCLASSIFIED

UNCLASSIFIED    PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136175

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COLORED (ORANGE) POLYESTERS WERE
  PREPD. BY INTERFACIAL POLYCONDENSATION IN $C_2H_2Cl_4$ OF
  2,2,BIS(4,HYDROXYPHENYL)PROPANE, BIS(4,(2,HYDROXY,
  1,NAPHTHYLAZO)PHENYL)CARBONATE (I), AND TEREPHTHALOYL OR ISOPHTHALOYL
  CHLORIDES AT 20DEGREES. THE M.P. AND REDUCED VISCOSITIES OF BOTH
  POLYESTERS WERE DETD.       FACILITY: MOSK. KHIM.-TEKHNOL. INST. IM.
  MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2    029                    UNCLASSIFIED              PROCESSING DATE--27NOV70

TITLE--SYNTHESIS AND STUDY OF PHOSPHORUS CONTAINING POLYCARBONATES BASED
ON PHOSGENE, DIAN, AND METHYLPHOSPHONIC ACID DICHLORIDE -U-

AUTHOR-(03)-SMIRNOVA, O.V., SAMSONIYA, SH.A., KOLESNIKOV, G.S.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 384-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, CARBONATE, PHOSPHATE ESTER, PHOSGENE,
CHLORINATED ORGANIC COMPOUND, X RAY ANALYSIS, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1230        STEP NO--UR/0460/70/012/005/0384/0387

CIRC ACCESSION NO--AP0134904
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0134904
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE POLYCONDENSATION OF (P HOC
  SUB6 H SUB4) SUB2 CME SUB2 (I) MEPOCL SUB2, AND CLCL SUB2 AT THE
  INTERFACE BETWEEN THE ALK. AND ORG. PHASES GAVE POLYCARBONATES CONTG.
  OP(:O)MEO UNITS.  THE POLYMERS CONTG. THESE UNITS ABSORB MORE O IN
  VACUUM THAN THE POLYCARBONATES BASED ON COCL SUB2 AND I ONLY.  THIS IS
  DUE TO THE REACTIONS OF O WITH THE H ATOMS OF ME GROUPS.  X RAY
  DIFFRACTOMETRY AND IR SPECTROSCOPY SHOWED THAT THE INTRODUCTION OF P
  DOES NOT SUBSTANTIALLY ALTER THE CRYSTALLINITY AND THE CRYSTAL TYPE OF
  THESE POLYCARBONATES.           FACILITY:  MOSK. KHIM.-TEKHNOL. INST. IM.
  MENDELEEVA, MOSCOW, USSR.

1/2    014                    UNCLASSIFIED              PROCESSING DATE--30OCT70
TITLE--SYNTHESIS AND STUDY OF AROMATIC POLYAMIDES -U-

AUTHOR-(04)-KOZYREVA, N.M., FEDOTOVA, O.YA., KERBER, M.L., KOLESNIKOV,
   G.S.
COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 230-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--ORGANIC SYNTHESIS, POLYAMIDE RESIN, INTERFACIAL
   POLYCONDENSATION, CHLORINATED ORGANIC COMPOUND, PHTHALIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0685        STEP NO--UR/0460/70/012/003/0230/0234

CIRC ACCESSION NO--AP0124357
                              UNCLASSIFIED

UNCLASSIFIED         PROCESSING DATE---30OCT70
CIRC ACCESSION NO--AP0124357
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  SEVERAL AROMATIC POLYAMIDES (I)
  WERE PREPD. FROM 4,4 PRIME DIAMINODIPHENYLMETHANE, 4,4 PRIME DIAMINO 3,3
  PRIME DIMETHYLDIPHENYLMETHANE, 2,2 BIS(4 AMINOPHENYL)PROPANE AND
  ISOPTHALOYL AND TEREPHTHALOYL CHLORIDES BY INTERFACIAL POLYCONDENSATION
  AND (OR LOW TEMP. POLYCONDENSATION IN ACNME SUB2.  THE LATTER METHOD
  GAVE I HAVING A SP. VISCOSITY 10 TIMES AS GREAT AS THAT OF POLYMERS
  OBTAINED BY THE INERFACIAL POLYCONDENSATION (AT THE SAME MONOMER
  CONCNS.).  THE SOFTENING POINT OF I RANGED FROM 200 TO 300DEGREES.
  FACILITY:  MOSK. KHIM. TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR                                                      UDC 541.64:547.551/.554

KATSARAVA, R. D., KORSHAK, V. V., RUSANOV, A. L., KOLESNIKOV, G. S., FEDOTOVA,
O. YA., and PARESISHVILI, O. I., Institute of Hetero-organic Compounds of
the USSR Academy of Sciences

"Synthesis and Investigation of Polybenzoylenebenzimidazols Based on the
Dianhydride of bis-(3,4-dicarboxyphenyl)phenylphosphine Oxide and Some
Aromatic Tetraamines"

Abstract: Polybenzoylenebenzimidazols (PBS) were synthesized on the basis of
the dianhydride of bis-(3,4-dicarboxyphenyl)phenylphosphine oxide and some
bis-(o-phenylenediamines). A comparative study was made of the properties
of the PBB and polyimides obtained on the basis of the above-mentioned
dianhydride by solid-phase cyclodehydration of prepolymers. The PBB synthe-
sized by cyclization of polyaminoamide acids in the solid state   are insoluble
in all of the solvents used. The data from studying model reactions
indicate that PBB obtained by solid-phase cyclization of polyaminoamido acids
have a three-dimensional structure. The possible reactions for the formation
of the three-dimensional polymers and a method of obtaining PBB soluble in
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USSR

organic  based on the dianhydride of bis(3,4-dicarboxyphenyl)phenylphosphine
oxide are proposed.  The infrared and nuclear magnetic resonance spectra of
the synthesized polymers are discussed, and their solubilities in seven
organic solvents are tabulated.

2/2

*AA0036248*

UR 0482

*3-71*

Soviet Inventions Illustrated, Section I Chemical, Derwent,

237113  ALUMINOSILICATE CATALYST  of high activity
is prepared by mixing the aluminium silicate
gel with natural aluminium silicate (silimanite)
whose particle size does not exceed 47 microns.
taken in amounts of 10-35% w/w of silamanite are
added.  The mixture is then stirred carefully,
formed into rods and calcined at 600°C for 4 hrs.
Parameters of the resulting catalyst are as follows:
sp. vol. of pores - 0.473, bulk wt. - 0.611 g/l.
sp. area - 348 m²/g., mean pore radius - 27 A
5.6.67. as 1195762/23-4.  I▓▓▓▓▓NIKOV, N.A
(25.6.69.)  Bul.8/12.2.69.  Class 12g.  Int.Cl. B01j.

19721077

VISHNEVSKIY, A. A., KOLESNIKOV, I. S., BALLYUZEK, F. V.,
PORTNOY, V. F., KOSTIN, E. D., PECHERSKIY, V. I., KOLOMIYETS,
S. G., and KHUNDANOV, L. L., Institute of Surgery imeni A. V.
Vishnevskiy Academy of Medical Sciences USSR, and Hospital
Surgery Clinic Military Medical Academy imeni S. M. Kirov

"Causes of Early Functional Incompetence of Allotransplants"

Abstract:  Causes and effects in postoperative developments were
analyzed, which enabled us to systematize the factors responsi-
ble for early functional incompetence of a transplanted organ.
Factors in four etiological categories were considered:  1.
Organization and Tactics:  each of availability of funds for
establishing transplantation centers; lack of the required
equipment, instruments, and drugs; absence of a central list of
potential recipients; and inadequate cooperation between trans-
plantation surgeons and reanimation specialists.
1/2

USSR

VISHNEVSKIY, A. A., et al., Eksperimental'naya Khirurgiya i
Anesteziologiya, Vol 1, Jan/Feb 71, pp 3-8

2. Physiological Anatomy: poor estimation of the anatomical and
physiological reserves of the transplant; and shortcomings in
surgical techniques. 3. Pathophysiology: deteriorated state
of the recipient; poor health of the donor; injury to the
transplant; excessive functional load on the transplant; and
inadequate prevention of operative and postoperative complica-
tions. 4. Immunobiology: poor matching of donor and recipient;
high immunological potential in the recipient; inadequate pre-
vention of stimulation of immunological reactions in the recip-
ient; and mistakes committed in immunosuppressive therapy.

2/2

Hematology

KOLESNIKOV, I. S., BALLYUZEK, F. V., SHANIN, YU. N., KCGTYUCHENKO, A. L., and MALAKHOV, S. F., Hospital Surgical Clinic, Military Medical Academy imeni S. M. Kirov, Leningrad

"Experience in the Use of the Hemoglobin-Containing Preparation Erigem as a Blood Substitute"

Abstract: As distinguished from blood extenders that merely bring the plasma volume to normal, the blood substitute Erigem, which contains hemoglobin that has been freed of stroma, transports $O_2$ and maintains the respiratory function of the blood. Maintenance of this function until it can be restored by a blood transfusion would be one of the characteristics of an ideal blood substitute. Erigem was developed in 1962-64 at the Scientific Research Institute of Hematology and Blood transfusion in Leningrad. The clinical application of small doses of Erigem had been investigated thoroughly, but data on the effects of large doses were lacking. In the work described in this instance, Erigem was administered in large doses to 18 patients with pulmonary disturbances on the first day after surgery of the lungs. In cases of this type, an insufficient respiratory function of the blood is often

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USSR

KOLESNIKOV, I. S., et al., Vestnik Khirurgii imeni I. I. Grekova, Vol 108,
No 5, May 72, pp 95-98

encountered in connection with a large blood loss, insufficient respiratory
function of the erythrocytes of transfused blood, and a pronounced oligocy-
themic hypovolemia. Lyophilized Erigem was diluted with Ringer's solution
and infused into the bloodstream in single doses of 14 ml per kg body weight
(700-1,100 ml) corresponding to approximately 30 g hemoglobin. The prepara-
tion exerted a marked hemodynamic effect, increasing the arterial pressure to
normal and reducing the tachycardia. It had an apyrogenic effect and exerted
a distinct volemic action that continued for the 6-7 hrs during which the
hemoglobin that had been introduced circulated in the body. The oxygen
capacity of the blood increased. The arterio-venous difference of the plasma
with respect to $O_2$ was 50% on the average after the administration of Erigem.
These and other data indicated that Erigem had a satisfactory effect in trans-
porting $O_2$ in the organism. No adverse reactions to the injections of Erigem
were observed. The kidney function was normal after the injections, but
caution is indicated in administering large doses of Erigem to patients with
kidney disturbances. Erigem can be kept in storage for approximately 2 yrs.

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Epidemiology

"Some Ways in Which Pathogenic Anaerobes Spread"

Abstract:  The epidemiology of botulism and tetanus is largely influenced by
the complex interaction of soil and other natural and social factors.  A
major source of infection of the soil is the excretions of cattle, poultry,
and rodents in whose stomach contents Clostridium tetani and Clostridium
botulinum were found in 62 to 64% and 21 to 34% of 1400 samples analyzed.
Tetanus morbidity is very high in regions with a predominance of chernozem,
meadow, and alluvial soils but low in erosion regions.  Alluvial soils are
infected with a great variety of microorganisms, including spore-forming
anaerobes.  Anaerobes are readily transported with soil minerals in the pro-
cess of denudation and accumulation which is shaping the present-day relief
of the earth's crust.  Still another important route of spread of the causative
agents of tetanus and botulism is the dust storm, which occurs with fair
frequency in the Ukraine.  Analysis of dust carefully taken from the tops of
snow mounds the day following a dust storm revealed the presence of both
microorganisms in almost 20% of the samples.

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USSR                                                      UDC: 62-55

KOLESNIKOV, K. D., ABROSIMOV, A. A., and KARAKOZOV, B. M. /Kuyby-
shev Polytechnical Institute/
"Method of Searching for Extremum of Inertialless Objects"
USSR Author's Certificate No 289397, filed 12 July 68, published
2 Feb 71 (from RZh-Avtomatika, telemekhanika i vychislitel'naya
tekhnika, No 12, 1971, Abstract No. 12A154P)

Translation: The invention deals with means of automatic control,
especially with extremal control systems (ECS). It may be used
when high accuracy is required to find the extremum in the pre-
sence of noise at the object output where the object is inertia-
less and has a symmetrical extremal characteristic. The known
method of finding the extremum of inertialless objects with sym-
metrical extremum characteristics is realized with constant search
velocity which is the reverse of the remembered extremum and with
the search system switched out as the extremum is approached. The
defect of this method is the low search accuracy, caused by the
necessary distance from the extremum to the reverse zone magnitude.
It should be noted that the greater the reverse zone, the better
the relation between the useful signal and the noise: i.e., the
greater the error in the extremum search, the higher the noise im-
munity. The proposed method differs from the known method in that
the reverse zone is chosen from the signal/noise ratio condition;
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KOLESNIKOV, K. D., et al, USSR Author's Certificate No. 289397

in the first pass through the extremum, the time taken by the system to move from the extremum point to the reverse point is remembered while the search through the remembered time interval is switched out with the movement of the system in the reverse direction. The sign of the input quantity for the inertialess object having a symmetrical extremal characteristic is formed by the extremum recollection method; motion in the system stops at the moment the extremum point is passed, after the second reverse, in the system's return to the extremum. The choice of reverse zone guarantees the system the required noise immunity, and the switch-out at the extremum point provides for high search accuracy. Resume

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Acc. Nr: AP0047195         Ref. Code: UR 0511

PRIMARY SOURCE: Stomatologiya, 1970, Vol 49, Nr 1 , pp 76-78

S. M. Budylina,   L. L. Kolesnikov,   V. V. Polyakov — THE TOPOGRAPHY OF TEMPERATURE INDICES OF THE ORAL CAVITY

S u m m a r y. The paper sets forth data of the temperature of the oral cavity according to topographical zones. The temperature was determined in 362 areas. Each area is characterized by a definite temperature level. The temperature rises from the middle of the alveolar arch to its branches. The authors give a characteristics of the temperature of teeth, mucous membrane of the palate and other regions. The referred to investigations of the topographical peculiarities of temperature indices of the oral cavity are of clinical importance.

REEL/FRAME

19790694

USSR                                                    UDC 533.9 + 533.4

KOLESNIKOV, L. M.

"Electrodynamic Acceleration of Plasma"

Moscow, Elektrodinamicheskoye uskoreniye plazmy, Atomizdat, 1971, 390 pp

Abstract:  This book is devoted to a theoretical study of problems of plasma physics and dynamics and plasma acceleration by electromagnetic fields.  Much attention is given to various methods of describing a fast-moving plasma and to a consideration of specific problems of the dynamics of such a plasma.  The general statements are carried through to the level of engineering computational methods and numerical results.  The book contains 83 figures, 11 tables, and a bibliography of 287 references.  The table of contents follows:

Chapter 1.  Electrodynamics of Moving Media

  1.  Fundamental Laws of Electrodynamics. Maxwell Equations in Integral Form

  2.  Maxwell Equations in Differential Form. Boundary Conditions

  3.  Maxwell-Hertz Equations for Moving Media. Principles of Einstein's
      Theory of Relativity

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USSR

KOLESNIKOV, L. M., Elektrodinamicheskoye uskoreniye plazmy, Atomizdat, 1971, 390 pp

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USSR

KOLESNIKOV, L. M., Elektrodinamicheskoye uskoreniye plazmy, Atomizdat, 1971,
390 pp

6.  Motion of Charged Particles in High-Frequency Electromagnetic Fields

7.  Electromagnetic Field of Moving Charges

Chapter 3.  Elementary Processes in Plasma

1.  Ionization of the Gas

2.  Recombination in the Plasma, Adhesion and Charge Exchange of Electrons

3.  Mobility and Diffusion of Particles in the Plasma

4.  Emission of Particles From the Surfaces of Solids

Chapter 4.  Kinetic Methods for Describing a Rarefied Plasma

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USSR

KOLESNIKOV, L. M., Elektrodinamicheskoye uskoreniye plazmy, Atomizdat, 1971, 390 pp

1. Collisions of Particles in a Plasma

2. Kinetic Equations of a Plasma

3. Debye Screening

4. Transfer Equations. Method of Moments

5. Small Parameter Method

6. Chapman-Enskog Method

7. Transfer Processes in a Fully Ionized Plasma

Chapter 5. Macroscopic (Hydrodynamic) Description of a Plasma

1. Macroscopic Equations in Lagrange and Euler V riables

2. Generalized Ohm's Law

3. Similarity Criteria

4/6

USSR

KOLESNIKOV, L. M., Elektrodinamicheskoye uskoreniye plazmy, Atomizdat, 1971, 390 pp

  4.  Particular Cases of Macroscopic Equations of Motion

Chapter 6.  Pulse Acceleration of Plasma

  1.  Operating Principles of Pulse Plasma Accelerators

  2.  Derivation of the Equations of Pulse Plasma Accelerators

  3.  Characteristics of the Electrodynamic Acceleration of a Plasma

  4.  Effect of Current-Voltage Characteristics of a Plasma on the Acceleration Process

  5.  Role of Forces of Resistance in the Electrodynamic Acceleration of a Plasma

  6.  Acceleration of a Pulsating Plasmoid

  7.  Effect of an Increase in Neutral Gas and Electrode Erosion on the Electro-dynamic Acceleration of a Plasma

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USSR

KOLESNIKOV, L. M., Elektrodinamicheskoye uskoreniye plazmy, Atomizdat, 1971, 390 pp

8.  Ionization and Recombination of an Accelerated Plasma

9.  On Diffusion and the Combined Effect of Mass-Transfer Processes and Resistance Forces in the Electrodynamic Acceleration of a Plasma

10.  Electrical Relationships and the Transformation of One Form of Energy Into Another in the Electrodynamic Acceleration of Plasma, Considering Mass-Transfer Processes

11.  On the Combined Operation of a High-Current Electrodynamic Plasma Accelerator With an Electric Power Source in the Form of a Single-Phase Salient-Pole Magnetoelectric Generator

12.  Induction Acceleration of Plasma

13.  Acceleration of Plasma in a Coaxial With Inductive Energy Accumulation

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USSR

KOLESNIKOV, L. M., Elektrodinamicheskoye uskoreniye plazmy, Atomizdat, 1971, 390 pp

Chapter 7.  Nonstationary Magnetohydrodynamic Acceleration of Plasma

Chapter 8.  Stationary Acceleration of Plasma

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USSR

KOLESNIKOV, L. M., Elektrodinamicheskoye uskoreniye plazmy, Atomizdat, 1971,
390 pp

3.  Integration of the Equations of a One-Dimensional Steady-State Plasma Flow

4.  Optimal Acceleration of a Compressible Plasma in Crossed Fields

5.  Optimal Acceleration of a Plasma in Strong Electromagnetic Fields

6.  Problems of a Jet in Magnetogasdynamics

7.  Plasma Flow in a Supersonic Nozzle

Chapter 9.  Hall Acceleration of Plasma

1.  Characteristics of the Flow of Hall Currents

2.  Plasma Acceleration by Hall Currents in Strong Magnetic Fields

3.  Two-Dimensional Nonstationary Plasma Flows With Hall Currents

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TITLE--COHERENT BREMSSTRAHLUNG IN A DIAMOND SINGLE CRYSTAL -U-

AUTHOR-(05)-GORBENKO, V.G., ZHEBROVSKIY, YU.V., KOLESNIKOV, L.YA.,
   MIROSHNICHENKO, I.I., ROMASKO, L.M.
COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(5), 1044-8

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--DIAMOND, SINGLE CRYSTAL, PHOTON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1232          STEP NO--UR/0367/70/011/005/1044/1048

CIRC ACCESSION NO--AP0136643
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0136643

ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  QUASI MONOCHROMATIC POLARIZED
PHOTON BEAM WAS OBTAINED FROM A DIAMOND SINGLE CRYSTAL AT THE KHARKOV
2,GEV EPSILON LINEAR ACCELERATOR.  THE INTEGRAL INTENSITY OF PHOTONS
MEASURED WITH QUANTAMETERS WAS 5 TIMES 10 PRIME9 EQUIV. GAMMA QUANTA IN
1 SEC WITH THE MEAN CURRENT OF EPSILON FLUX 0.2 MUA.  THE COHERENT
EFFECT WAS INVESTIGATED BY MEASURING INTEGRAL PHOTON AND SECONDARY
ELECTRON INTENSITIES AS FUNCTIONS OF THE DIAMOND ORIENTATION ANGLES
RELATIVE TO THE INCIDENT EPSILON MOMENTUM.  INTENSITY AND POLARIZATION
SPECTRA OF THE PHOTON BEAM ARE GIVEN.  THE PHOTON POLARIZATION WAS ESTD.
FROM THE RESULTS OF THE (GAMMA,RHO) REACTION STUDIED IN THE 1ST PI N
RESONANCE REGION.              FACILITY:  FIZ.-TEKH. INST., KHARKOV, USSR.

UNCLASSIFIED

USSR

KOLESNIKOV, M. A. and SHEYNBERGAS, I. M.

"Scheffer Functions in a 4-Valued Logic"

Moscow, Raboty po tekhn. kibernet.—Sbornik (Works on Technical Cybernetics -- Collection of Works), Computer Center of the Academy of Sciences, USSR, No 3, 1971, pp 50-100 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V443, by G. Blokhina)

Translation: A 4-valued logic $P_4$ is examined. A function f of $P_4$ is called a Scheffer function if its closure relative to the superposition operations coincides with $P_4$; that is, f forms a system that is complete in $P_4$. Clearly, the function f is a Scheffer function if and only if it is not contained in a single one of the so-called precomplete classes; that is, the closed set of functions which is distinct from $P_4$, but whose union with any function not belonging to it is now a system complete in $P_4$. It is also clear that a system of these precomplete classes for clarifying Scheffer status can, generally speaking, be redundant. The work establishes that this actually is the case. Of the entire set of precomplete classes in $P_4$, whose number, as we know

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- 28 -

USSR

KOLESNIKOV, M. A. and SHEYNBERGAS, I. M., Raboty po tekhn. kibernet.--
Sbornik, No 3, 1971, pp 50-100

(Referativnyy Zhurnal -- Matematika, Abstract No 10A35, 1965) is 82, a sub-
system $\mathfrak{M}$ of 30 precomplete classes is singled out, and it is shown that the
nonmembership of the function in each of these is the criterion of its
Scheffer status. It is also stated that any proper subsystem of the system
$\mathfrak{M}$ no longer exhibits this property.

USSR

UDC 51:621.391

KOLESNIKOV, M. A., SHEYENBERGAS, I. M.

"The Schaeffer Function in Four-Valued Logic"

Raboty po Tekhn. Kibernet. Vyp. 3 [Works on Engineering Cybernetics, No 3 -- Collection of Works], Moscow, Acad. Sci. USSR Computer Center, 1971, pp 50-100, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V443 by G. Blokhina).

Translation:  The 4-valued logic $P_4$ is analyzed.  Function f from $P_4$ is called a Schaeffer function if its closure relative to the operations of superposition corresponds with $P_4$, i.e. f forms a system complete in $P_4$.  Clearly, function f is a Schaeffer function when and only when it is not contained in any of the so-called subcomplete classes, i.e. the closed sets of functions which differ from $P_4$, but the union of which with any function not belonging to it is a complete system in $P_4$.  It is also clear that the system of subcomplete classes may be, generally, redundant for explanation of the Schaeffer quality of a function. This work establishes that this is actually the case.  Of the entire set of sub-complete classes in $P_4$, the number of which as we know (RZhMat, 1969, 10A35) is equal to 82, system ℭ of 30 subcomplete classes is separated and it is demon-strated that membership of a function in each of these is a criterion which in-dicates that it is a Schaeffer function; it is also demonstrated that any natural sub-system of system ℭ does not have this property.

1/1

USSR

AFONIN, L. A. and KOLESNIKOV, N. A.

"Formalization of Language for Report Documentation"

Lingvist. Probl. Avtomatiz. Inform. Poiska [Linguistic Problems of the Automation of Information Retrieval -- Collection of Works], Kiev, 1972. pp 13-21 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V821).

Translation: This article formalizes a certain language for reference-information systems for industrial enterprises and describes a method of its realization. The language is designed for workers in the planning and economic services of enterprises and allows primary and production informa-tion to be recorded in computers and extracted in the form of references, tables and report forms.                    Ye. Burgina

1/1

USSR                                         UDC 533.31.532.542

LYKOV, A. V., KOLESNIKOV, P. M., and MARTYNENKO, O. G.

"Wave Description of Aerothermooptics"

Minsk, Energoperenos v Kanalakh (Energy Transport in Channels) Science and
Technology Press, 1970, pp 3-38

Abstract:  The article studies the physical characteristics for the focusing
and defocusing of laser and light rays using thermal gas lenses.  Basic equa-
tions for wave thermooptics are given for the fields and the potentials by
allowing for the heat fields in them.  Two conditions are examined for heating
a stationary flow of gas in a cylindrical tube and their optical characteris-
tics.  The first is that of a stationary flow in a tube at constant wall tem-
perature, wherein it is found that due to the radial change in density the re-
fractive index of the flow is increased toward the axis of the tube, and con-
sequently the radiational variation in the temperature field in such a tube
will result in focusing of the light rays.  The second condition is that of a
stationary gas flow in a cylindrical tube at a constant density of the heat
flux on the wall.  In cross section the various temperature profiles are sim-
ilar and, with an increase in length, the gas temperature increases linearly.
Therefore, it is found to be sufficient to represent the temperature variation

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USSR

IYKOV, A. V., et al, Energoperenos v Kanalakh Science and Technology Press, 1970, pp 3-38

for the radius and the length. Thus, the flow conditions in the tube with $q_c$ = const will result in the transverse temperature distribution's having a focusing effect on the ray. Solutions are found to the wave equations by using various methods, including those of parabolic equations, perturbations, geometric optics, and other approximation and asymptotic methods. The properties of a light conductor with gas lenses are studied, the theory of light conductors with these lenses being a specific case of the theory of open lines. Here two approaches are possible for constructing the theory, one on the basis of the Helmholtz equation and the other on the basis of the parabolic equation, both of which are given in the article [equations (2.17) and (3.5), respectively]. The symbols used throughout the article are defined at the end, and 73 bibliographic references are cited.

2/2

1/2    032                    UNCLASSIFIED              PROCESSING DATE--30OCT70
TITLE--RELAXATION PROCESSES DURING ELECTRODYNAMIC PLASMA ACCELERATION -U-

AUTHOR-(02)-KOLESNIKOV, P.M., STOLOVICH, N.N.

COUNTRY OF INFO--USSR

SOURCE--MINSK, BELORUSSIAN SSR. INZHENERNO-FIZICHESKII ZHURNAL, VOL. 18,
MAR. 1970, P. 517-526
DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RELAXATION PROCESS, PLASMA ACCELERATION, MASS TRANSFER,
ELECTRON CAPTURE, CHARGE EXCHANGE, ION RECOMBINATION, CATHODE SPUTTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1438        STEP NO--UR/0170/70/018/000/0517/0526

CIRC ACCESSION NO--AP0118427
                          UNCLASSIFIED

2/2    032              UNCLASSIFIED          PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0118427

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE PRINCIPAL PHYSICAL
PROCESSES LEADING TO THE INTENSE MASS TRANSFER IN AN ELECTRODYNAMICALLY
ACCELERATED PLASMA.  PARTICULAR ATTENTION IS GIVEN TO THE COMBINED
EFFEC OF RECOMBINATION, AMBIPOLAR DIFFUSION, ELECTRODE SPUTTERING,
CHARGE EXCHANGE, ELECTRON CAPTURE BY IONS, AND RESISTANCE FORCES ON
PLASMA ACCELERATION. THE MASS TRANSFER EQUATIONS ARE SOLVED WITH
ALLOWANCE FOR THESE EFFECTS.

UNCLASSIFIED

TITLE--CONTENT OF OESINOPHILES IN PATIENTS WITH LYMPHOGRANULOMATOSIS PRIOR
   TO AND AFTER TREATMENT WITH CYTOSTATIC PREPARATIONS -U-

AUTHOR--KOLESNIKOV, R.N.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 3, PP 72-74

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VERNEREAL DISEASE, BLOOD CHEMISTRY, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0320          STEP NO--UR/0504/70/042/003/0072/0074

CIRC ACCESSION NO--AP0102782
                              UNCLASSIFIED

UNCLASSIFIED          PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102782
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.   ACCORDING TO THE DATA PRESENTED BY
   THE AUTHOR OESINOPHILIA WAS OBSERVED IN 26.2PERCENT OF THE CASES OF
   LYMPHOGRANULOMATOSIS OF THE STAGE IN 30.1PERCENT OF THE SECOND STAGE AND
   IN 16.2PERCENT OF THE THIRD STAGE BEFORE TREATMENT.   AFTER TREATMENT
   WITH CYTOSTATIC PREPARATIONS EOSINOPHILIA WAS FOUND IN 36.4PERCENT IN
   THE I STAGE OF THE DISEASE, IN 41.4PERCENT IN THE SECOND STAGE AND IN
   27.6PERCENT IN THE III STAGE.   THUS, AFTER TREATMENT THERE IS A TENDENCY
   TOWARDS A RISE IN OESINOPHILIA INCIDENCE.   IN THE GROUP OF PATIENTS
   TREATED WITH CYTOSTATIC PREPARATIONS FOR THE FIRST TIME CLINICAL
   IMPROVEMENT WAS ACCOMPANIED BY AN INCREASE OF OESINOPHILS IN 62.2PERCENT
   AND A DECREASE IN 26.7PERCENT OF THE CASES.   IN PATIENTS WITH A NORMAL
   CONTENT OF OESINOPHILS IN THE PERIPHERAL BLOOD THEIR INCREASE WAS
   OBSERVED IN 28.8PERCENT AND DECREASE IN 7.7PERCENT, THE NORMAL CONTENT
   REMAINED IN 63.5PERCENT.

UNCLASS

AA0 044300

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

1/70

243976 POWERFUL ULTRASONIC OSCILLATIONS IN GASES, method for their generation. The purpose of the invention is the generation of an ultrasonic stream and braking it. This is achieved by generating additional gas flows on the main stream periphery, and in case of an electrically conducting gas, by applying a coaxial magnetic field directed from the centre to the periphery.

The main gas stream is produced by blowing gas from a nozzle under an excess pressure.
14.6.67 as 1164203/18-10.STANYJIOVICH.K.P.et alia.
(1.10.69) Bul.17/14.5.69. Class 42a. Int.Cl.B 06b.

AUTHORS: Stanyukovich, K. P., Pogodin-Alekseyev, G. I., Kolesnikov, S. M., Khavroshkin, O. B.

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197770854

PROCESSING DATE--11SEP70

UNCLASSIFIED

1/2    019

TITLE--CRYSTAL STRUCTURE OF A COMPLEX OF GERMANIUM DICHLORIDE WITH 1,4,DIOXANE -U-

AUTHOR--KULISHOV, V.I., BOKIY, N.G., STRUCHKOV, YU.T., NEFEDOV, O.M., KOLESNIKOV, S.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 71-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTAL STRUCTURE, GERMANIUM COMPOUND, COMPLEX COMPOUND, DIOXANE, X RAY STUDY, CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0316

STEP NO--UR/0192/70/011/001/0071/0074

CIRC ACCESSION NO--AP0103971

UNCLASSIFIED

2/2    019
CIRC ACCESSION NO--AP0103971
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE CRYSTAL STRUCTURE OF THE
COMPLEX OF GECL SUB2 WITH 1,4,DIOXANE, GECL SUB2 TIMES C SUB4 H SUB8 O
SUB2, IS DETD. BY MEANS OF 3 DIMENSIONAL X RAY DATA.   THE CRYSTALS
BELONG TO THE MONOCLINIC SYSTEM, A 7.59, B 11.72, C 8.85 ANGSTROMS, BETA
EQUALS 96.3DEGREES, ZETA EQUALS 4, AND SPACE GROUP IS CC.   THE CRYSTAL
IS MADE UP OF ENDLESS CHAINS...-GECL SUB2-OC SUB4 H SUB8 O), BETWEEN
WHICH ONLY VAN DER WAALS INTERACTION EXISTS.  THE GE ATOM FORMS TWO
NORMAL ELECTRON BONDS WITH ATOMS OF CL (GE-CL DISTANCES OF 2.25 AND 2.28
ANGSTROMS, CL-GE-CL-ANGLE EQUALS 94.6DEGREES) AND ITS VACANT THIRD
P.ORBITAL INTERACTS WITH TWO ATOMS OF O (GE-O DISTANCES OF 2.41 AND 2.48
ANGSTROMS).

UDC 632.954:635.11/13/.21/.34/.64/.652

USSR

KOLESNIKOV, V. A., SIDOROV, V. I., and CHKHETIANI, V. R., Scientific
Research Institute of Horticulture

"The Effect of Herbicides on the Weed Growth and Crop of Fruit Cultures
With Prolonged Application"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 8 (118), 1973, pp 50-54

Abstract:  After a prolonged unchanged application of prometrin, chloro-
IFK and trephlan on some plots, their effectiveness against the weeds
dropped considerably.  Alternating these agents led to a lesser drop of
their effect.  The appearance of the weeds contaminating fruit cultures
changed after prolonged application of these herbicides.  Only trephlan
lowered the yield of fruit after the third and fourth year of continuous
unaltered application.  With application of prometrin and chloro-IKF an
insignificant drop in the crop was experienced, which could be due to the
cumulative effect of these herbicides, which happens to be relatively low.

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USSR

UDC 632.954.635

KOLESNIKOV, V. A., and SIDOROV, V. I., Scientific Research Institute of Vegetable Farming

"The Effectiveness of Herbicide Application in Vegetable Crop Rotation"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 6, 1972, pp 45-47

Abstract:  Long-term effects of herbicides were tested on a crop rotation of green beans, early cabbage, and tomatoes.  The herbicides were sprayed on as follows:  prometryne in a 1.5 kg/ha dosage on the 3rd or 4th day after bean planting; treflan in a 2 kg/ha. dosage on the eve of cabbage planting with immediate working into the soil by hand fork; and diphenamid in an 8 kg/ha. dosage 2 days before setting out tomato plants, without working into the soil.  Each test plot was paired with a control plot.  The soil was of moderately podzolic soddy loam, pH 6.0, humus content (according to Tyurin) 2.6%, $P_2O_5$ according to Kirsanov 18.8 and $K_2O$ according to Maslova 16.4 mg. per 100 g. of soil.  Weather during the 2 years of the test was favorable for plant growth.  The herbicides reduced weed content of these cultures significantly throughout the vegetation period and also significantly reduced the seed formation of remaining weeds and hence weed renewal by seed. The herbicides also saved a great deal of hand work.  Aftereffects of the
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USSR

KOLESNIKOV, V. A., and SIDOROV, V. I., Khimiya v Sel'skom Khozyaystva, Vol
10, No 6, 1972, pp 45-47

herbicides, particularly during the 2 year application, were manifested in
a lowering of weed content in later cultivations throughout the vegetation
period.  The herbicides indicated had no adverse effects on the harvest
or the quality of the vegetables tested.

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USSR

UDC 632.954:635.13/.21/.34

KOLESNIKOV, V. A., and SIDOROV, V. I., Scientific Research Institute of Vegetable Economy

"Aftereffects of Herbicides Employed on the Background of Banked and Nonbanked Plowing on the Contamination and Harvest of Vegetable Cultures"

Moscow, Khimiya v Sel'skom Khozyaistve, No 4, 1973, pp 49-51

Abstract: Herbicides used in the chain of crop rotation -- prometrin (2 kg/hectare) on potato plantings, prometrin or linuron (2 kg/hectare) on carrots crops, semeron (0.7 kg/hectare) on cabbage crops lowered substantially the contamination of these cultures during the entire vegetation period, thus lowering the need for manual weeding. Application of herbicides on preceeding cultures either in case of banked or nonbanked plowing resulted in lower costs for weed control of the second and third cultures of the crop rotation cycle -- carrots and cabbage. Using the proper sequence of these herbicides it should be possible to shorten their application to two rather than three years. These herbicides did not lower the crop or the quality of potato, carrots or cabbage. The banked plowing appeared to be more advantageous since it lowered the weed growth.

1/1

USSR                                              UDC 632.954:635.13

NAUMOVA, V. I., KOLESNIKOV, V. A., and KROTOVA, O. A., Scientific Research
Institute of Vegetable Growing

"The Use of Herbicides on Fall Plantings of Carrots and Beets"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 6, 1971, pp 46-48

Abstract:   In 1967-1969 the Perlovskoye Department of the Experimental Model
Farm of the Scientific Research Institute of Vegetable Growing conducted
experiments for the purpose of establishing the optimum times and methods for
the use of herbicides (Propazine and Pyramin) on fall plantings of carrots and
beets to assure early production.   It was found that Propazine is most effec-
tive against annual dicotyledonous weeds in carrot plantings when applied in
the fall in a dose of 2.5 kg/ha.   The effectiveness of Propazine in a dose of
1.5 kg/ha is the same in the case of spring or fall application.   The average
two-year carrot yield in variants of 1.0, 1.5 and 2.5 kg/ha dosages of
Propazine was at the level of control, but hand weeding labor was 58, 83 and 90
percent less respectively.   Pyramin was found to be most effective for beet
plantings at a dose of 7.5 kg/ha applied in the fall.   The effectiveness of
Pyramin at a dose of 5 kg/ha was the same whether applied in the spring or fall.
At doses of 3 and 4 kg/ha Pyramin was more effective in a fall than a spring

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USSR

NAUMOVA, V. I., et al., Khimiya v Sel'skom Khozyaystve, Vol 9, No 6, 1971, pp
46-48

application.  There was no decrease in the beet yield, while there was a
54-80 percent decrease in the hand weeding labor.

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UDC 621.762.002.5(088.8)

USSR

DOROFEYEV, YU. G., LEBEDEV, B. A., ZHERDITSKIY, N. T., and KOLESNIKOV, V. A., Novocherkassk Polytechnic Institute

"Die for Making P/M Bushings"

USSR Authors' Certificate No 264136, Cl. 49 h, 11; 49 i, 16, (B 21 j B 21 k), filed 19 Jun 68, published 24 Jun 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G477P)

Translation: The die consists of a frame, an upper punch suspended from the top of the die frame on a spring, a bottom punch which is the pusher, and a needle passing through the upper punch. In order to make possible the extraction of the needle from a pressed bushing without breaking it, the die is equipped with a double upper-punch lock, which is tripped by guide blocks fastened to the top of the die frame. Four illustrations.

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Magnesium

UDC 669.721.472(088.8)

USSR

ZUYEV, N. M., IVANOV, A. B., VUKOLOV, V. V., SHARUNOVA, G. M., KASHKAROV, A. Z., DONSKIKH, P. A., KOLESNIKOV, A. V., GOLUBEV, A. A., SPRYGIN, A. I., KOLESNIKOV, V. A., and KUZ'MIN, V. V., All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry, and Berezniki Titanium-Magnesium Combine. .

"Device for Conveying Liquid Electrolyte and Magnesium"

Translation:  In order to utilize the heat of the exothermic reactions taking place during the mixing of reversible electrolyte with $MgCl_2$ and to preclude the consumption of electric energy for heating the main conveyer lines, a pipeline for conveying the reversible electrolyte and metallic magnesium was installed inside a trough-shaped channel to convey a magnesium chloride-en-riched electrolyte, the pipeline being connected at one end with the last electrolyzer of the flow line, and at the other with a mixer, while the trough-shaped channel is connected with the lead electrolyzer and the mixer.
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KOLESNIKOV V. A.        3

UR 0482

AA0040676

Soviet Inventions Illustrated, Section I Chemical, Derwent 1/70

241694 MAGNESIUM ELECTROLYSER LINING is made up of a thin asbestos layer 1, furnace slag 2, heat resistant concrete 3, and firebricks 4. This reduces the liner cost by 8-15 times without adversely affecting thermal insulation.
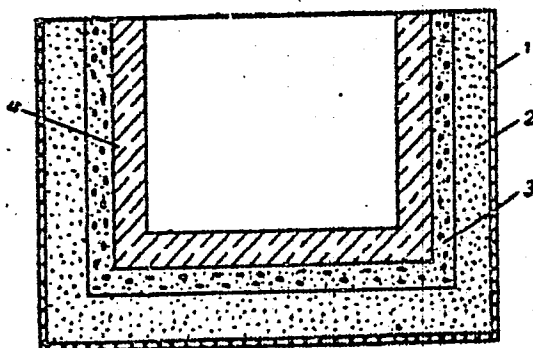
AUTHORS: Sprygin, A. I.; Kuz'min, V. V.; Bashkatov, V. V.; Volchkov, G. V.; Devyatkin, V. N.; Aleksandrov, V. A.; and Kolesnikov, V. A.

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1/2

19750279

AA0040676



26.2.68 as 1221183/22-1. A.I. SPRYGIN et alia
(25.8.69) Bul 14/18.4.69. Class 40c. Int.Cl.C22d.

19750280

Acc. Nr: AP 0050807    Abstracting Service:    Ref. Code:
CHEMICAL ABST. 5-70    UR 0339

K

102070b  Effect of purification processes on the thermal stability of carbonated juices. Kolesnikov, V. A.; Makshutov, V. A.; Dobrovol'skaya, L. N. (USSR). Sakh. Prom. 1970, 44 (1), 18-22 (Russ). The content of reducing sugars, pH, color, salts, N, colloids, the filtration rate, and vol. of the ppt. were examd. for a crude juice after the 1st and 2nd carbonation and as thick juice after 5 different purification processes: cold carbonation, hot carbonation, hot defecation, cold-hot slow defecation, and the normal procedure used in the Korenovsk factory. The feasibility of finding the best treatment is demonstrated, in this case cold-hot slow defecation.    Olaf Thomsen

REEL/FRAME
19810809

UNCLASSIFIED

PROCESSING DATE--16OCT70

1/2     009

TITLE--5175C FRUCTOSE DECOMPOSITION IN AN ALKALINE SOLUTION AT HIGH TEMPERATURES -U-

AUTHOR-(03)-KOLESNIKOV, V.A., MAKSVUTOV, V.A., DOBROVOLSKAYA, L.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED. PISHCH. TEKHNOL. 1970, (1), 42-4

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FRUCTOSE, THERMAL DECOMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1089

STEP NO--UR/0322/70/000/001/0042/0044

CIRC ACCESSION NO--AT0119948

UNCLASSIFIED

2/2    009
CIRC ACCESSION NO--AT0119948
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.  THE DECOMPN. OF DIL. ALK. FRUCTOSE
SOLNS. WAS INVESTIGATED.  THE DECOMPN. RATE INCREASES WITH INCREASING PH
AND TEMP., AND ON ADDN. OF NH SUB4 CL.  SMALL AMTS. OF SO SUB2 STABILIZE
THE SOLNS.           FACILITY:  KRASNODAR. NAUCH. ISSLED. INST. PISHCH.
PROM., KRASNODAR, USSR.

USSR

UDC 616.24-089.843-092.9-07:616.24-009.4-072.7

KOLESNIKOV, V. D., KIPRENSKIY, Yu. V., RABINOVICH, Yu. Ya., and MALYSHEVA, L. G., Department of Clinical Physiology, and Department of Thoracic Surgery, Institute of Clinical and Experimental Surgery, Ministry of Health USSR, Moscow

"Study of the Ventilation and Mechanics of Respiration of the Replanted Lung Under Experimental Conditions"

Abstract:  Clinical and x-ray studies were conducted of lung replantation in dogs for a period of one year after the operation.  No significant narrowing of the bronchial anastomoses was noted during that period.  Spirography, bronchospirography, and analysis of blood gases showed that the functional indices of the replanted lung were close to normal within 3 months after surgery.  However, the mechanical properties of the lung were not restored even at the end of the observation period when an increase in alveolar pressure, bronchial resistance, and elasticity and a decrease in distensibility were still noted.  These abnormalities are probably attributable to histological changes in the tissues, blood vessels, and bronchial walls, as well as to the formation of adhesions in the pleural cavity surrounding the replanted lung.

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UDC 621.382:621.317.799

USSR

KLYUCHANTSEV, S.V., KOLESNIKOV, V.G., LITVINOV, V.M., MOISEYEV, I.A., SERGEYEV, N.M., TALOV, I.L.

"Multiprogram System With Time Sharing For Monitoring Of Parameters And Classification Of Semiconductor Devices"

V sb. Novoye v tekhn. poluprovodn. proiz-va (New Semiconductor Production Technology--Collection Of Works), Voronezh, Voronezh University, 1971, pp 95-104 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B538)

Translation: The paper reports on the development of an automatic system for monitoring and classification of transistors and semiconductor diodes. The following enter into the composition of the system: 1) A Type "Elektronika-100" computer with a storage size of 4096 words and a device for input-output of information; 2) A Type UT-1 program-controlled tester with 1 ÷ monitoring stations each. The maximum set [komplekt] of the system can have up to seven UT-1 testers. The mathematical security developed makes it possible to perform multi-program control by testers (the monitoring stations operate in a time-sharing regime) and with the following monitoring regimes: 1) Simultaneous monitoring of up to seven different types of transistors and semiconductor diodes (the

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USSR

KLYUCHANTSEV, S.V., et al. V sb. Novoye v tekhn. poluprovodn. proiz-va, Voronezh, Voronezh University, 1971, pp 96-104

overall extent of the test program should not exceed 240 tests) and the separation of them into 14 or 32 groups; 2) Automatic monitoring and processing of the results of measurements (quantity and percentage of devices in each group, quantity and percentage of rejected devices), and also the entry of these results into the numerical printing [tsifropechat']. The system can change the quantitative composition of the equipment with the object of accommodation to the requirements of test, series, or mass production. 3 ill. 1 ref. V.P.

2/2

- 90 -

USSR                                                        UDC 621.382.3

AKIMOV, M.A., KIR'YANOVA, V.M., KOLESNIKOV, V.G., SHCHEVELEV, M.I.

"Effect Of Dislocation Densities On The Parameters Of Epitaxial-Planar Transistors"

Elektron.tekhnika. Nauch.-tekhn.sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 39-42 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B241)

Translation:  The effects were studied of dislocation densities on the breakdown voltage of the collector p-n junctions, the amplification factor with respect to the current, and the reverse current of the collector p-n junction. It is established that with an increase of the dislocation densities from $10^4$ to $6.10^4$ cm$^{-2}$ the breakdown voltage is decreased and the amplification factor with respect to the current and the reverse current of the collector p-n junction are increased. Summary.

1/1

Acc. Nr:                 Abstracting Service:          Ref. Code:
*AP0034053*              CHEMICAL ABST. 4-70           *UR 0078*

71355s  Cesium iodide-silver iodide system. Kornienko,
V. P.; Shapovalova, G. M.; Kolesnikov, V. N. (Khar'kov. Gos.
Univ., Kharkov, USSR).                         070, 15(1), 262-3
(Russ). Melting diagram of CsI-AgI system is constructed.
The system forms an incongruently melting compd., 2CsI, AgI.
                                                HM JR

REEL/FRAME
19710696

USSR

GIPPIUS, YE. F., KOLESNIKOV, V. N., SHUMSKAYA, L. I.

"Studies of a Decaying Helium Plasma"

Minsk, Zhurnal Prikladnoy Spektroskopii, August 1970, pp 208-211

Abstract: The variation of the parameters of a strongly ionized helium plasma in the early stages of decay ($\sim 30 \mu\sec$) was studied, and the dynamics of the population of excited levels of atoms and ions during this period were followed. Indications of the existence in the plasma of a nonmaxwellian group of fast electrons with densities as great as $10^{16} cm^{-3}$ were obtained. Additional (not recombination) maxima of the intensity of the continuum and lines, which were interpreted as the result of heating of the gas of the convergent shock wave, were discovered. The coefficient of recombination for doubly ionized helium was found to be 2 orders of magnitude less than the calculated one.

The article includes 3 illustrations and 3 references.

1/1

TITLE--EFFECT OF TECHNOLOGICAL CONDITIONS ON THE PROPERTIES OF A SILVER,
  CADMIUM OXIDE COMPOSITE -U-
AUTHOR-(03)-YUDIN, B.A., KOLESNIKOV, V.N., BRAGIN, V.P.

COUNTRY OF INFO--USSR

SOURCE--POROSHKOVAYA MET., FEB. 1970, (2), 69-76

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ELECTRON MICROSCOPY, MOLDING MATERIAL, COMPOSITE MATERIAL,
  SILVER, POWDER METALLURGY, PHYSICAL CHEMISTRY PROPERTY, X RAY
  DIFFRACTION ANALYSIS, CARBONATE, CADMIUM COMPOUND, METAL OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0125          STEP NO--UR/0226/70/000/002/0069/0076

CIRC ACCESSION NO--AP0123897
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0123897
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHODS OF PRODUCING AG AND AG-CDO
MOULDINGS (INTENDED TO SERVE AS ELECTRICAL CONTACTS) BY POWDER
METALLURGICAL TECHNIQUES ARE DISCUSSED, WITH SPECIAL REF. TO THE
RELATION BETWEEN THE TECHNOLOGICAL CONDITIONS EMPLOYED IN REDUCING THE
CONSTITUENTS FROM THE CORRESPONDING CARBONATES AND THE PHYSICAL AND
CHEMICAL PROPERTIES OF THE FINAL MATERIALS.    ELECTRON MICROSCOPE
EXAMINATION REVEALS A SERIES OF STAGES IN THE REDUCTION OF AG FROM AG
SUB2 CO SUB3, THE AG PARTICLES MERGING BY A MECHANISM REMINISCENT OF THE
MOTION OF A LIQUID, WITH BOTH TWO AND THREE DIMENSIONAL DIFFUSION.
COHERENTLY DIFFUSING AG PARTICLES 0.15 MUM IN DIA. ARE DETECTED BY X RAY
DIFFRACTION.

UNCLASSIFIED

KOLESNIKOV, Ye. F.

So: JPRS 55015
25 Jan 72

UDC: 362.11(47-21:47-22)

## DISTINCTIONS IN LEVEL AND STRUCTURE OF HOSPITAL CARE FOR RURAL PATIENTS IN DIFFERENT TYPES OF CITIES

[Article by Ye.A. Loginova, M.V. Potekhina, V.M.Shipova, N.I. Trubilin, I.N. Smolevik, I.T. Bugun, A.K. Pilyakunov, Z.P. Draganenko, Ye.F. Kolesnikov, A.F. Strayev, Yu. I. Baybakov, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization iment N.A. Semashko, Rostovskaya, Ul'yanovskaya, and Kurskaya oblast health departments: Moscow, Sovetskoye Zdravookhraneniye, Russian, No 12, 1971, submitted 24 March 1971, pp 16-21]

Urban therapeutic institutions play an important role in rendering qualified and particularly specialized care for the rural population.

It is a known fact that the volume of medical care rendered to the rural population by urban institutions is increasing annually, however, to date this is not taken into consideration in planning urban public health care. In addition, there are still insufficient special investigations to substantiate the rural residents demand for specialized hospital and extramural care at different stages of organization of rural public health.

The absence of differentiated standards of the demands of the rural population with regard to special forms of medical care makes it imperative to pursue indepth investigations of the level and distinctions of the demand for different forms of therapeutic and prophylactic care in concrete institutions of different types of cities.

For this purpose, the All-Union Scientific Research Institute of Social Hygiene and Public Health Organization iment N.A. Semashko, jointly with the oblast public health departments of Rostovskaya, Ul'yanovskaya, Kurskaya, Vologodskaya oblasts and the Bashkir Ministry of Health conducted a complex study of the level and structure of hospital, polyclinic, and visiting consultation services offered to rural residents in the different cities.

In this article we submit the results of a study of the level and structure of hospital care rendered to the rural population in different types of cities in Rostovskaya, Ul'yanovskaya, and Kurskaya oblasts; data pertaining to other basic are undergoing statistical processing.

- 18 -

KOLESNIKOV, Ye. F.

St: JPRS 54019
9 Sep 71

UDC: 362.12:65.012.2(049.3)

# A METHODOLOGICAL APPROACH TO PLANNING OUTPATIENT POLYCLINIC CARE

In the article by Professor I.D. Bogatyrev (Public Health) two main indices are proposed for the planning and financing of outpatient polyclinic care: 1) population size in a specific administrative region; 2) public health funds per inhabitant per year from the national budget. It is also recommended that correction coefficients be taken into consideration for the different republics and oblasts.

The proposals made by Professor I.D. Bogatyrev are substantiated and verified by the data in statistical reports and by the results of studies made in a number of administrative regions.

While we support, in principle, the proposals made in this article, we should like to make some additional comments in evidence of the imperfection of the existing system of planning and financing outpatient polyclinic care.

Apparently there is no need to prove the correlation between number of visits to polyclinics and availability of hospital beds. When there is a shortage of hospital beds and a large number of refusals of hospitalization (when there are absolute indication for hospital care)there is an inevitable increase in number of follow-up polyclinic visits (with due consideration of active visits and requests that patients pay visits, including the dispensary group). However, until recently, when drafting the budget, an increment in personnel for public health institutions was provided only in relation to the increase in number of beds (approximately 100 posts per 100 beds).

Thus, oblasts with a better base, better supply of beds, had greater opportunities for expanding both hospital and outpatient care, since 55-60

- 22 -

USSR      $K$                                        UDC 533.916

KOLESNIKOV, Ye. K., and FILIPPOV, B. V.

"Evolution of Charged Particles From a Point Source in a Magnetic Dipole Field"

Leningrad, Vestnik Leningradskogo Universiteta - Matematika, Mekhanika, Astronomiya, No. 2, Apr 70, pp 88-120

Abstract: Two integrals of the equations of motion of a charged particle in the field of a magnetic dipole are used to obtain information on the nature of the propagation of particles injected by a point source into this field. A quali- tative picture is given of the motion of particles in the field of the magnetic dipole, and criteria are formulated for the capture of a particle by this field. Values are found for the velocities of particles which, in all probability, move to an infinite distance from the dipole or are absorbed by an impermeable sphere surrounding the dipole. These results are applied to a study of the propagation of electrons in the magnetic field of the earth in cases of low and high tem- perature injection. The results are valid in regions in which the deviation of the actual magnetic field of the earth from a dipole can be neglected. It is

1/2

USSR

KOLESNIKOV, Ye. K., and FILIPPOV, B. V., Vestnik Leningradskogo Universiteta –
Matematika, Mekhanika, Astronomiya, No 2, Apr 70, pp 88-120

shown that low-temperature electrons move near the force surfaces of the ter-
restrial dipole. Also discussed is plasma injection in the field of a magnetic
dipole for finite dimensions of the injector.

2/2

Agriculture

USSR

KOLESNIKOV, Yu.

"A Solarium for Seeds"

Moscow, Nauka i Zhizn', No 7, 1973, pp 40-42

Abstract:  Exposure of seeds to concentrated, pulsed sunlight has been shown
by pot and field experiments to improve the qualities and yields of a host
of crops, including cotton, sugar beets, potatoes, tomatoes, watermelons, and
wheat.  In the case of tomatoes grown in Central Asia, for example, solar
stimulation of seeds boosted yields by as much as 20% and, in addition, in-
creased the plants' resistance to bacterial and viral infections.  Sunlight
can also be used as an agent to induce mutations, many of which are bene-
ficial.  A mutant variety of the well-known Bezostaya 1 wheat, apparently
superior to the original form in protein content and yield, is now undergoing
extensive trials at strain-testing stations in the Ukraine and Moldavia.

1/1

USSR                                        UDC:   51.155.001.57:681.3.06

LAKHOV, V. I., KOLESNIKOV, Yu. A.

"Checking the Characteristics of an Automatic Control System by the Method
of Pattern Recognition"

Translation:  An analysis is given of methods of pattern recognition from
the standpoint of recognition accuracy.  A comparative evaluation is pre-
sented of algorithms for recognizing the patterns of dynamic character-
istics together with the results of a computer experiment which implies
the feasibility of technical realization of the given algorithms on modern
general-purpose and specialized digital computers with storage volume of
from 100 000 to 600 cells and less at a speed of the order of 1 000 opera-
tions per second.  Authors' abstract.

1/1

Acc. Nr: *AP'0034077_*     Abstracting Service:     Ref. Code:
                           CHEMICAL ABST. 4-7°      UR 0078

K

71172e  Na$^+$, K$^+$||SO$_4^{--}$ NO$_2^-$, –H$_2$O system.  Zhuravlev,
E. F.; Kolesnikova, A. S. (Voronezh. Politekh. Inst., Voronezh,
USSR).  Zh. Neorg. Khim. 1970, 15(1), 222–5 (Russ).  Soly.
in the title system was detd. at 0, 25, and 50°; the data are
tabulated and soly. diagrams for 0 and 50° are constructed.  The
soly. was detd. by $n$ measurements.  Crystn. field of glaserite
widened with increasing temp. and nitrites concn. in the system.
Apparently Na and K nitrites stabilize glaserite.     HMJR

REEL/FRAME

19710720

USSR                                    UDC 612.886.014.47

KOLESNIKOVA, A. V., Moscow Scientific Research Institute of Hygiene imeni
F. F. Erisman

"Some Reactions of Testibular Stimulation"

Moscow, Vestnik Otorinolaringologii, No 6, 1971, pp 58-60

Abstract:  The effects of vestibular stimulation (rotation in a vertical
centrifuge) were studied in rats on the basis of various physiological res-
ponses:  latent period of the lift reaction (raising the head and shoulders),
pulse and respiratory rates, and defensive reaction to electrical stimulation
of the skin.  These indexes were recorded before, immediately, and 15 and 60
min after rotation.  The latent period of the lift reaction increased while
the pulse and respiratory rates decreased, the magnitude being directly
related to the intensity of centrifugation.  The defensive reaction to elec-
trical stimulation of the skin showed no pattern.  Slowing of the pulse and
respiratory rates is ascribed to the rotation-induced decrease in sympathetic
tone which regulates the cardiac and respiratory rates in rats.

1/1

USSR

RYZHKOV, V.A., BRATOV, A.M., KOLESNIKOVA, I.A., KORNEYEV, V.N.

UDC 621.59:533.59.539.23

"Study Of The Composition Of Residual Gases In Deposition Units Under Industrial Conditions"

Translation: The results are presented of an analysis with the aid of a KM-1 quadrupole mass spectrometer of the composition of residual gases in the vacuum chambers of various types of deposition units. Under industrial conditions, and in the types of deposition units considered, the composition of residual gases differs but little and is determined by the technological process in progress and the individual condition of the unit. Vapors of water, nitrogen and oxygen and various hydrocarbons are the principal components of residual gases in deposition units. Substantial changes of the composition of the residual gases occur during heating of the substrates and deposition. The composition of the residual gases during deposition of thin films depends on the form of the material which is vaporized. The KM-1 mass spectrometer showed its usefulness for conducting qualitative analyses of residual gases under industrial conditions. A.F.

1/1

Electronic Materials

USSR

UDC 621.317.39:531.7

SHNEYDER, A. YU., ZHURAVLEV, V. S., Candidates of Technical Sciences, VOLKINSH-
TEYN, YE. M., KOLESNIKOVA, I. N., Engineers

"Pressure-Sensitive Sensors made of Electrically Conducting Polymers"

Moscow, Pribory i Sistemy Upravleniya, No 2, 1972, pp 40-41

Abstract: The design and operating characteristics are presented for a pres-
sure-sensitive sensor built at the Central Scientific Research Institute of
Prosthetics and Orthopedic Appliances. The sensor is made of porous polymer
material (sponge rubber, porolon, and so on) impregnated with various electri-
cally conducting compounds (resins, enamels, and so on). The operating prin-
ciple of the element is compared with the operating principle of sensors with
carbon columns. The dispersion zone of the load characteristics of a series
of 10 sensors is plotted, and oscillograms are presented analysis of which
shows that the characteristics of the developed sensor repeat the shape of the
characteristics of a strain gage. The sensor permits recording of processes
taking place with frequencies to 6-8 hertz. Both the static and dynamic
characteristics of the sensors are presented. A study of the static character-
istics showed that on variation of the pressure from zero to 0.8 kilogram-
force/cm$^2$, its resistance varies within the range of 100-2 kilohms.

1/1

1/2    031
UNCLASSIFIED
TITLE--SIMILAR SOLUTIONS TO THE BOUNDARY LAYER EQUATIONS FOR A SLENDER
BODY OF REVOLUTION IN THE PRESENCE OF A POSITIVE PRESSURE GRADIENT -U-
PROCESSING DATE--20NOV70
AUTHOR-(03)-KOLESNIKOVA, L.M., FROLOV, L.G., SHMANENKOV, V.N.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA ZHIDKOSTI I GAZA,
JAN.-FEB. 1970, P. 173-175.
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SLENDER BODY, BOUNDARY LAYER EQUATION, PRESSURE GRADIENT, FLOW
ANALYSIS, FLOW STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1455
STEP NO--UR/0421/70/000/000/0173/0175
CIRC ACCESSION NO--AP0112449
UNCLASSIFIED

CIRC ACCESSION NO--AP0112449     UNCLASSIFIED          PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.  ANALYSIS OF SIMILAR SOLUTIONS TO THE BOUNDARY LAYER EQUATIONS IN THE PRESENCE OF A PRESSURE GRADIENT, UNDER THE ASSUMPTION THAT THE INFLUENCE OF THE TRANSVERSE CURVATURE OF THE SLENDER BODY ON THE FLOW IS NEGLIGIBLE.  TWO FAMILIES OF VELOCITY PROFILES ARE OBTAINED, ONE OF WHICH IS CHARACTERIZED BY THE PRESENCE OF BLACKCURRENTS AT THE WALL.  THE INFLUENCE OF THE TRANSVERSE CURVATURE OF THE BODY ON BOUNDARY LAYER SEPARATION AND ON THE INTEGRAL CHARACTERISTICS OF THE BOUNDARY LAYER IS EXAMINED.

UNCLASSIFIED

USSR

BELOVITSKIY, G. Ye., KOLESNIKOVA, L. N., and FRANK, I. M., Institute of Nuclear Research of the Academy of Sciences USSR

"Angular Distribution of 13.7-Mev Neutrons in Elastic Scattering by Pb206, 207, 208 Isotopes"

Abstract: The differential cross sections for elastic scattering of 13.7-Mev neutrons by Pb206, 207, 208 isotopes were measured and compared. All measurements were conducted under identical conditions. The angular distributions for the three isotopes were the same within the limits of the measurement accuracy (∿20%). This is explained by the fact that neutron scattering by heavy nuclei is basically potential scattering. A comparison of the experimental data with calculations based on the optical model yielded satisfactory agreement. The agreement was best for scattering angles less than 110° but the experimental cross sections were higher than the theoretical cross sections for larger angles. This is attributed to the fact that a correction for multiple scattering was not introduced into the experimental data. Since the lead isotopes behave identically within the limits of the experimental accuracy, it is concluded that the good approximation of the experimental data
1/2

USSR

BELOVITSKIY, G. Ye., et al., Yadernaya Fizika, No 4, Apr 72, pp 662-665

to the theoretical curve supports the validity of the experimental determina-
tion not only of the relative but also of the absolute values of the differen-
tial cross sections of the elastic scattering that were obtained. The simi-
larity of the angular distributions for the three isotopes is said to be
caused by the fact that elastic scattering by heavy nuclei for neutrons
with energies of about 14 Mev is basically potential and is therefore not
greatly different when the number of nucleons changes by 1-2 units.

2/2

- 47 -

USSR

BELOVITSKIY, G. Ye.; KOLESNIKOVA, L. N.; FRANK, I. M. (Institute of Nuclear Research, USSR Academy of Sciences)

"Inelastic Scattering of Neutrons with an Energy of 13.7 Mev by Isotopes of Lead"

ABSTRACT: The authors measured the energy spectra for the inelastic scattering of 13.7 Mev by $Pb^{206,207,208}$ isotopes. A well-defined group corresponding to 2.6-Mev $(3^-)$-level excitement was observed in all the energy spectra. The angular distributions of the neutrons for the inelastic scattering with excitation of the well-known $(3^-)$-level in $Pb^{206,207,208}$ agree within the limits of accuracy of the measurements. The angular distributions were compared with ones calculated for the optical model in a distorted wave approximation. The value of the octupole deformation parameter $\beta_3 = 0.16 \pm 0.02$ was obtained for $Pb^{208}$.

1/1

1/2    011                    UNCLASSIFIED           PROCESSING DATE--30OCT70
TITLE--HYDROCARBON COMPOSITION OF PETROLEUM FROM THE YUZHNO-IOLATANSKIY
   DEPOSIT IN THE TURKMEN SSR -U-
AUTHOR-(04)-GUREVICH, M.G., KOLESNIKOVA, L.P., MOROZOVA, S.F.,
   SAMOZVANTSEVA, M.S.
COUNTRY OF INFO--USSR

SOURCE--GAZOV. DELO 1970, (1), 30-2

DATE PUBLISHED------70


SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--PETROLEUM DEPOSIT, CHEMICAL COMPOSITION, AROMATIC HYDROCARBON,
   CRUDE OIL, GEOGRAPHIC LOCATION, CHROMATOGRAPHIC ANALYSIS



CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0435          STEP NO--UR/0508/70/000/001/0030/0032

CIRC ACCESSION NO--AP0129660
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0129660

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PETROLEUM FROM JURASSIC DOLOMITE SEAMS AT 3500 M IN THIS DEPOSIT YEILDED ON SEPN. BY CAPILLARY CHROMATOG. 11 AND 27PERCENT OF FRACTIONS B. LESS THAN OR EQUALS TO 125DEGREES (A) AND LESS THAN OR EQUAL TO 200DEGREES (B), RESP. IN A WERE DETD. THE INDIVIDUAL C SUB4-8 PARAFFINIC AND C SUB5-9 NAPHTHENIC HYDROCARBONS COMPRISING 75 AND 15PERCENT, RESP., OF IT AND 8.29 AND 1.71PERCENT, RESP., OF THE PETROLEUM. IN B WERE DETD. THE INDIVIDUAL C SUB6-11 AROMATIC HYDROCARBONS COMPRISING 100PERCENT OF IT AND 3.73PERCENT OF THE PETROLEUM. N,ALKANE CONTENT ROSE FROM 54PERCENT IN C SUB5 , TO 71PERCENT IN C SUB8,ALKANES. THE N-ISO RATIO WAS 1.86 FOR THE ALKANES (2.2PERCENT C SUB4, 14.7PERCENT C SUB5, 18.6PERCENT C SUB6, 20.8PERCENT C SUB7, 26.5PERCENT C SUB8), AND THE CYCLOHEXANES CYCLOPENTANES HYDROCARBON RATIO WAS 1.41:1 FOR THE NAPHTHENES. C SUB6, C SUB7, AND C SUB8 COMPDS. COMPRISED 5.67, 22.16, AND 33.12PERCENT, RESP., OF THE AROMATIC HYDROCARBONS.          FACILITY: MINKHGP IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

1/2     022

UNCLASSIFIED

TITLE--SINGLE PHOTON TRANSITION FROM THE METASTABLE LEVEL OF THE HYDROGEN ATOM WITH CONSIDERATION FOR SPIN STATES -U-

PROCESSING DATE--27NOV70

AUTHOR-(04)-ZHUKOVSKIY, V.CH., KOLESNIKOVA, M.M., SOKOLOV, A.A., HERRMANN, I.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(4), 622-6

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HYDROGEN, TRANSITION PROBABILITY, ELECTRON TRANSITION, ELECTRON SPIN, METASTABLE STATE, PHOTON EMISSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1067

STEP NO--UR/0051/70/028/004/0622/0626

CIRC ACCESSION NO--AP0136487

UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0136487                                    PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  THE PROBABILITY WAS DETD. OF THE
SPONTANEOUS SINGLE PHOTON TRANSITION FROM THE METASTABLE LEVEL 2S SUBONE
HALF OF THE H ATOM WITH AN ACCOUNT OF THE SPIN STATES.  THE BREIT TELLER
FORMULA WHICH DESCRIBES THE ANALOGOUS PROCESS WAS CORRECTED.  THE
PROBABILITY WAS ALSO CALCD. OF THE STIMULATED TRANSITION FROM THE SAME
LEVEL.

UNCLASSIFIED

1/2    008
UNCLASSIFIED
TITLE--A STUDY ON MYCELIUM COMPOSITION OF ACTINOMYCES STREPTOMYCINI GROWN
ON A DEFINED MEDIUM WITH GLUCOSE OR STARCH -U-          PROCESSING DATE--02OCT70
AUTHOR-(03)-LEVITOV, M.M., KOLESNIKOVA, N.A., GORSKAYA, S.V.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 91-94

DATE PUBLISHED------70


SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACTINOMYCES, STREPTOMYCIN, POLYSACCHARIDE, CARBOHYDRATE


CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1730
STEP NO--UR/0220/70/039/001/0091/0094
CIRC ACCESSION NO--AP0109691
UNCLASSIFIED

CIRC ACCESSION NO--AP0109691    UNCLASSIFIED    PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  A STUDY ON MYCELIUM COMPOSITION OF ACTINOMYCES STREPTOMYCINI GROWN ON A DEFINED MEDIUM WITH GLUCOSE OR STARCH HAS SHOWN THAT THE MYCELIUM GROWN ON THE MEDIUM WITH GLUCOSE CONTAINED MORE NITROGEN AND NUCLEIC ACIDS THAN THE MYCELIUM GROWN ON STARCH.   THE MYCELIUM, GROWN ON THE MEDIUM WITH STARCH, WAS ENRICHED WITH CARBOHYDRATES, ESPECIALLY WITH POLYSACCHARIDES.  SINCE LESS AMOUNT OF STREPTOMYCIN WAS PRODUCED ON THE MEDIUM WITH STARCH, SOME COMPETITION CAN BE SUGGESTED TO TAKE PLACE BETWEEN SYNTHESIS OF POLYSACCHARIDES AND THAT OF ANTIBIOTIC, TAKING INTO CONSIDERATION CARBOHYDRATE NATURE OF THE LATTER.

UNCLASSIFIED

1/2    009                     UNCLASSIFIED              PROCESSING DATE--13NOV70
TITLE--PREPARATIVE GAS CHROMATOGRAPHY OF LIGHT HYDROCARBONS -U-

AUTHOR-(02)-KOLESNIKOVA, R.D., YEGELSKAYA, L.P.

COUNTRY OF INFO--USSR

SOURCE--(PREPARATIVNAYA GASOVAYA KHROMATOGRAFIYA LEGKIKH UGLEVODORODOV)
   MOSCOW, KHIMIYA, 1970, 187 PP
DATE PUBLISHED-------70


SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GAS CHROMATOGRAPHY, HYDROCARBON SEPARATION, CHEMICAL PURITY,
   CHEMICAL LABORATORY APPARATUS


CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1691           STEP NO--UR/0000/70/000/000/0001/0187

CIRC ACCESSION NO--AM0130565
                         UNCLASSIFIED

2/2     009

CIRC ACCESSION NO--AM0130565     UNCLASSIFIED          PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   PREFACE  7.   INTRODUCTION  8.
CHAPTER I  PRINCIPLES OF PREPARATORY GAS CHROMATOGRAPHY  11.  II  COLUMN
FILLERS  33.  III  PREPARATORY DEVICES AND EQUIPMENT  65.  IV  METHODS
FOR SEPARATION OF LIGHT HYDROCARBONS  100.  V  DETERMINATION OF PURITY
OF HYDROCARBONS SEPARATED BY MEANS OF PREPARATORY CHROMATOGRAPHY  165.
APPENDIX  178.  PREPARATORY CHROMATOGRAPHY REPRESENTS THE MOST
CONVENIENT METHOD FOR OBTAINING PURE SUBSTANCES IN LABORATORY
CONDITIONS.  IN THE NEAR FUTURE, PREPARATORY CHROMATOGRAPHY WILL BE
NCESSARY FOR INDUSTRIAL AND SEMI INDUSTRIAL PRODUCTION OF PURE
SUBSTANCES, HOWEVER, NOT EVEN ONE GENERAL TYPE WORK ON PREPARATORY GAS
CHROMATOGRAPHY OF LIGHT HYDROCARBONS CAN BE FOUND IN CONTEMPORARY
LITERATURE.  THE AUTHORS ATTEMPTED TO FILL THIS GAP AND HELP MANY
SCIENTISTS IN THE USE OF PREPARATORY CHROMATOGRAPHY IN THEIR WORK.

UNCLASSIFIED

1/2    028              UNCLASSIFIED           PROCESSING DATE—30OCT70
TITLE—CALCULATIONS OF RATE CONSTANTS OF ELEMENTARY REACTIONS. 3. NATURE
 OF THE COMPENSATION EFFECT IN GAS PHASE REACTIONS OF RADICALS WITH
AUTHOR-(02)-AVRAMENKO, L.I., KOLESNIKOVA, R.V.

COUNTRY OF INFO—USSR

SOURCE—IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 327-35

DATE PUBLISHED————70

SUBJECT AREAS—CHEMISTRY

TOPIC TAGS—FREE RADICAL, CHEMICAL REACTION RATE, COMPLEX COMPOUND, GAS
 STATE, GAS PHASE REACTION, OXYGEN, METHANE, ETHANE, ETHYLENE, ALCOHOL,
 ALDEHYDE

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—2000/0800      STEP NO—UR/0062/70/000/002/0327/0335

CIRC ACCESSION NO—AP0124469
                   UNCLASSIFIED

CIRC ACCESSION NO--AP0124469

ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  FROM FACTORS THAT AFFECT THE
MAGNITUDE OF THE PREEXPONENTIAL FACTORS IN REACTION RATE EXPRESSIONS,
THE REACTION DATA FOR O ATOMIC ATTACK ON SIMPLE ORG. MOLS., E.G. CH
SUB4, C SUB2 H SUB6, C SUB2 H SUB4, MECH:CH SUB2 ME SUBC:CH SUB2,
(MECH:)SUB2, ROH, AND RCHO, WERE TABULATED AS TO ACTIVATION ENERGY AND
PREEXPONENTIAL COEFFS.  THE DIFFERENT TYPES OF TRANSITION COMPLEXES IN
SUCH REACTIONS CHARACTERIZE THE DIFFERENT TYPES OF OVERALL REACTIONS.
THE DIFFERENCES ARE EXPRESSED IN TERMS OF NO. OF ROTATIONAL DEGREES OF
FREEDOM ASSUMING VIBRATIONAL STATISTICAL SUMS ARE CLOSE TO UNITY.
REACTIONS WITH LARGE ACTIVATION ENERGY, I.E. CLEAVAGE REACTIONS, FORM A
TRANSITION COMPLEX IN WHICH MANY ROTATIONAL DEGREES OF FREEDOM EXIST AND
THIS LEADS TO A LARGE PREEXPONENTIAL FACTOR.  REACTIONS WITH LOWER
ACTIVATION ENERGY FORM COMPLEXES WITH ELSS DEGREES OF ROTATIONAL FREEDOM
AND THUS MORE RIGID STRUCTURE, LEADING TO LOWER PREEXPONENTIAL FACTOR
AND APPEARANCE OF COMPENSATORY EFFECTS IN REACTION RATES.
FACILITY:  INST. KHIM. FIZ., MOSCOW, USSR.

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USSR

KHAMIDOV, D. K., KHAKIMOV, P. A., KOLESNIKOVA, S. S., and KAMATALIYEV, U.,
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"Study of the Effect of Ionizing Radiation on the Mitotic Activity of Cells in a Culture"

Abstract: Plant growth and development are stimulated by the action of comparatively low doses of ionizing radiation. The crop yield is likewise enhanced. Together with the increase in biomass, the cell dimensions are increased. Similar results were obtained in the irradiation of bacteria. The authors set out to study the effect of comparatively low doses of gamma-radiation on the mitotic activity of cells under culture conditions. Ascitic cancer cells (Ehrlich) and human cancer cells (HeLa) were used in the study. The mitotic activity of the former was determined during 6-7 days of development, after preliminary introduction of 0.3 ml (at a concentration of 60-70. $10^6$ cell/ml) into each test animal. It was found that irradiation with 25 roentgen produced acceleration of the mitotic activity of both types of cells studied (43-45% increase in the HeLa cells, 28% increase in the Ehrlich cells). Acceleration of cell division activity was observed with radiation doses of

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KHAMIDOV, D. K., et al., Uzbekskiy Biologicheskiy Zhurnal, No 2, 1971, pp 10-12

up to 100 roentgen. With doses of 100-300 roentgen, the number of dividing cells was equal to that of the normal cells. However, the number of cells approaching the prophase increased and the amount of metaphase lamellae remained unchanged. With a dose of 600 roentgen, some inhibition of mitotic cell division was observed. The nuclei were pyknotic. The number of granular lumps of DNA was decreased. With a dose of 3 Kr, no mitoses were observed. The acceleration of cell division under the effect of low gamma-radiation doses is attributed to an increase in content and synthesis of nucleic acids in the cell. The authors propose that low doses of ionizing radiation stimulate the transmission of the $G_1$ period of cells or the entry of the cells

or the entry of the cells into the cellular cycle out of the $G_0$ period of mitotic cell division. It is possible, in the opinion of the authors, that with low gamma-radiation doses, small quantities of radiation anabolites are formed, which effect the life activity of the cells.

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TITLE--STRUCTURE OF PRODUCTS FROM PENTENE POLYMERIZATION ON A PHOSPHORUS CATALYST -U-

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AUTHOR-(05)-KOLESNIKOVA, T.A., KOLBIN, M.A., KAYUMOV, R.L., KRASNOVA, L.V., GRUDNIKOVA, A.F.

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ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE PREPN. OF ISOPENTENES FOR THE PRODUCTION OF SYNTHETIC RUBBER INVOLVES 2 STEPS:  DIMERIZATION OF ISO AND N-C SUB5 FRACTIONS AND DEPOLYMN. TO PURE ISOPENTENES (T. A. KOLESNIKOVA, 1965).  THE COMPN. OF DIMER MIXT. IS NOW DETD.  THE DEHYDRATION OF ISOAMYL ALCS. OR AMUL ALCS. OVER AL SUB2 O SUB3 CATALYST AT 360DEGREES OR 365DEGREES GAVE 99-99.9PERCENT PURE 1,PENTENE, 2,PENTENE, 2,METHYL,1,BUTENE AND 2,METHYL,2,BUTENE.  THE PENTENES WERE DIMERIZED AT 185DEGREES, 50 ATM, AND 1 HR PRIME NEGATIVE1 SPACE VOL. VELOSICY, VOER H SUB3 PO SUB4 ON SILICA GEL.  THE PRODUCTS WERE HYDROGENATED AND ANALYZED BY GAS CHROMATOG.  THE HYDROGENATED DIMERS, REGARDLESS OF THE STARTING PENTENE, CONTAINED 30-40PERCENT TRIMETHYLHEPTANES, SIMILAR TO 20PERCENT DIMETHYLOCTANES, SIMILAR TO 20PERCENT TETRAMETHYLHEXANES, AND SIMILAR TO 20PERCENT C SUB8 C SUB9, AND ISO-C SUB10 HYDROCARBONS.

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TITLE--RELATIONSHIP BETWEEN MAGNETIC FIELD AND SPORADIC E LAYER -U-

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AUTHOR-(03)-KOLESNIKOYA, T.V., STAROVATOV, A.A., FILONOVA, L.D.

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ABSTRACT/EXTRACT--(U) GP-0-    ABSTRACT.  MANY STUDIES HAVE BEEN MADE OF THE
RELATIONSHIP BETWEEN THE EARTH'S MAGNETIC FIELD AND THE SPORADIC E
LAYER.  HOWEVER, THE RESULTS HAVE BEEN AMBIGUOUS.  THIS STUDY WAS MADE
ON THE BASIS OF DATA FOR 1964, 1965, AND 1966 FOR ALMA-ATA STATION.  IT
WAS POSSIBLE TO DETERMINE THE DEVIATIONS OF THE MEAN HOURLY F SUBO E
SUBS VALUES FROM THE MEAN MONTHLY VALUE AND THE DELTA F SUBO E SUBS
VARIATIONS WERE AVERAGED BY SEASONS.  THE DELTA H (GAMMA) VALUES WERE
ALSO DETERMINED FOR THE H-COMPONENT OF THE EARTH'S MAGNETIC FIELD.  THE
DIURNAL VARIATIONS  DELTA H AND DELTA F SUBO E SUBS WERE DETERMINED.  IN
SUMMER AND AT THE EQUINOX THE CHANGES OF THESE PARAMETERS ARE IN
ANTIPHASE; IN WINTER THE CORRELATION IS POSITIVE.  IN SUMMER AND AT THE
EQUINOX, WHEN E SUBS OF TYPES C AND H IS MOST COMMONLY OBSERVED, THE
CORRELATION BETWEEN F SUBO E SUBS AND H IS NEGATIVE, BUT IN WINTER, WHEN
TYPES L AND F PREVAIL, THE CORRELATION IS POSITIVE.  SOMETIMES THE E
SUBS SCREENING FREQUENCIES EXPERIENCE BRIEF BUT SIGNIFICANT CHANGES
DURING THE DAY.  DURING 1966 THERE WERE ABOUT 220 F SUBB E SUBS BURSTS.
DURING SUMMER THESE BURSTS ARE USUALLY OBSERVED DURING THE DAYTIME AND
FOR THE MOST PART BELONG TO E SUBS TYPE C.  THEIR DURATION DOES NOT
EXCEED AN HOUR.  VALUES OF THE H-, Z- AND D- COMPONENTS WERE DETERMINED
FROM THE MAGNETOGRAMS AT TIMES OF F SUBB E SUBS BURSTS AND DURING
ADJACENT TIME PERIODS.  IT WAS FOUND THAT F SUBB E SUBS BURSTS ARE
USUALLY ACCOMPANIED BY MARKED H-, Z- AND D-COMPONENT CHANGES.  AN
INCREASE IN F SUBB E SUBS WAS ACCOMPANIED WITH EQUAL PROBABILITY BY AN
INCREASE OR DECREASE IN THE H- COMPONENT.

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ABSTRACT/EXTRACT--IN ONLY 39PERCENT OF THE CONSIDERED CASES DID MAGNETIC
FIELD CHANGES TRANSPIRE SYNCHRONOUSLY WITH F SUBB E SUBS FOR THE
H-COMPONENT, IN 43PERCENT OF THE CASES FOR THE Z-COMPONENT AND IN
27PERCENT OF THE CASES FOR THE D-COMPONENT. CHANGES IN ELEMENTS OF THE
EARTH'S MAGNETIC FIELD EITHER LAG SOMEWHAT OR SOMEWHAT OUTSTRIP THE F
SUBB E SUBS CHANGES, THE TIME DIFFERENCE BEING ABOUT 15 MINUTES. THE E
SUBS LAYER TYPE C CAN BE ACCOMPANIED BY THE APPEARANCE OF A LOCAL
CURRENT SYSTEM WHOSE MAGNETIC FIELD IS EITHER COMBINED WITH THE CURRENT
SYSTEM IN THE NORMAL E REGION OR IS SUBTRACTED FROM IT. ACCORDINGLY,
THERE CAN BE AN INCREASE OR DECREASE IN THE H- AND Z-COMPONENTS.
VARIATIONS OF THE D-VECTOR BECOME UNDERSTANDABLE IF IT IS POSTULATED
WITH THE MAGNETIC FIELD OF THE REGIONAL CURRENT SYSTEM MAY NOT COINCIDE
WITH THE DIRECTION OF THE MAGNETIC FIELD VECTOR OF CURRENTS FLOWING IN
THE E REGION.

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FRIDLYANDER, I. N., GULIN, A. N., SANDLER, V. S., YATSENKO, K. P., KOLESNIKOVA, V. I., POLYAKOV, YE. S., YUDIN, A. F.

"Deformable Alloy Based on Aluminum"

USSR Author's Certificate No 310946, filed 24 Mar 70, published 1 Oct 71 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 4I627P)

Translation: A deformable alloy based on aluminum is proposed with the following composition: 15-40% Be, 1.5-8% Mg, 0.2-2.5% Li, and Al for the rest. In order to increase the corrosion strength, 0.1-0.6% Si can be introduced into the alloy. In order to increase the strength and plasticity, up to 0.2% Zr, Mn, Cr, and Ti introduced separately or jointly can be added. The proposed alloy permits variation of the properties within broad limits: $\sigma_B$ 40-65 kg/mm$^2$, $\delta$ 9-12%, $\psi$ 8-13% (the pressed ingots after quenching and aging). The alloy containing 24.4% Be, 4.3% Mg, 1.9% Li, and the rest Al after heat treatment has $\gamma$ 2.3 g/cm$^3$, E 13,650 kg/mm$^2$, $\sigma_B$ 59.5 kg/mm$^2$, $\delta$ 11.3%, $\psi$ 11.5%. The heat treatment conditions are as follows: quenching from 450°, 40 minutes and aging at 120°, 24 hours. The proposed alloy is obtained by the method of melting and casting in a vacuum and in an inert environment with subsequent deformations. Obtaining the intermediate products is possible by the powder metallurgy methods. The material can

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be used in rigid structural elements in which the defining factors are a combination of lightness, high rigidity with high strength at operating temperatures to 120-150° and under short-term effects, to 400°.

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